Intelligent Training System

Version 2

USER'S MANUAL

Made in the USA

BullEx Digital Safety - 105 Jordan Road Troy, New York 12180
Phone: 1-888-4BULLEX Fax: 518-689-2034

⚠ WARNING

1. **Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage.**
2. **Read the setup, operation and maintenance instructions thoroughly before installing or servicing this equipment.**
3. **Failure to follow these instructions could result in fire or explosion, which could cause property damage, personal injury, or death.**

⚠ DANGER

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

⚠ WARNING

For Outdoor Use Only
(outside any enclosure)

Manufactured in the USA
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HOW I.T.S. WORKS

The Intelligent Training System utilizes patented sensor technology to detect how well the trainee uses the SmartExtinguisher™. I.T.S. can sense if the user has aimed at the base of the fire, is properly squeezing the extinguisher handle, and is properly sweeping the nozzle of the extinguisher.

The four sensors on the I.T.S. base unit detect the discharge of compressed air and water vapor from the SmartExtinguisher™. The onboard microprocessor based control system then varies the flow of propane to each burner via electronic gas valves to increase or decrease the size of the flames.

To successfully extinguish the fire, the trainee must sweep the extinguisher across the base of the fire. If the trainee aims just below, or just above the base, the flames will go down, but will not extinguish. If the trainee only aims at one side of the fire, that side will be extinguished while the other side continues to grow.

The sensors are critical to the operation of the system and should be treated with care to ensure the long-life of the Intelligent Training System. I.T.S. comes with a sensor guard which should be placed over the ultrasonic housing whenever I.T.S. is not in use.

The use and installation of this product must conform to local codes. In absence of local codes, use the National Fuel and Gas Code, ANSI Z223, NFPA 54, Storage and Handling of Liquid Petroleum Gases, ANSI/NFPA 58 or CSA B149.1, Natural Gas and Propane Installation Code.

Save these instructions for future reference.

RATINGS:
Fuel: Liquid Propane
Input: 500,000 Btuh (146.4kW)
Gas Supply psi max (62.1 kPA)
Duty Cycle: 50%
Electrical: 12 VDC Input @ 6 A max

DISCLAIMER

Purchaser assumes all risk in the assembly and operation of this unit. Failure to follow this manual's WARNINGs and instructions can result in severe personal injury, death or property damage. BullEx is not responsible for any damage, death or injury that may arise from improper or mis-use of I.T.S.

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⚠ WARNING

FOR YOUR SAFETY

1. This appliance is for outdoor use only. Do not use in a building, garage, or any other enclosed area.
2. Do NOT use this appliance for indoor heating. TOXIC carbon monoxide fumes can accumulate and cause asphyxiation.
3. Always use in accordance with all applicable local, state and national codes. Contact your local fire department for details on outdoor burning.
4. When using this appliance, exercise the same precautions you would with any open fire.
5. The use of alcohol, prescription or non-prescription drugs may impair the consumer's ability to safely operate this appliance.
6. Do NOT use this appliance without reading the entire "User's Manual".
7. Do NOT alter this appliance in any manner.
8. Do NOT store or use gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance.
9. Do NOT use this appliance within 40 feet of automobiles, trucks, vans or recreational vehicles.
10. Do NOT use in an explosive atmosphere. Keep the area surrounding the appliance free and clear from combustible materials, gasoline and other flammable liquids.
11. Do NOT use this appliance under any overhead or near any unprotected combustible constructions. Do not use this appliance near or under overhanging trees and shrubs.
12. Always use this appliance on a hard, level, non-combustible surface such as concrete, rock or stone. Do NOT use on wooden decks.
13. Do NOT smoke while using unit.
14. Do NOT change props until the prop is completely cool.
15. Use gloves when changing or removing props.
16. Always fill this appliance with the proper amount of water specified in the "Set-Up Instructions" before each use.
17. Do NOT wear flammable or loose clothing when operating this appliance.
18. Do NOT use in windy conditions.
19. Do NOT attempt to manually light the pilot.
20. All surfaces of this appliance are hot when in operation. To avoid burns, do NOT touch appliance until it has completely cooled for at least 15 minutes.
21. Do NOT attempt to move or store I.T.S. until completely cooled.
22. Do NOT move this appliance when the "burn box" contains water.
23. Do NOT lean over this appliance when lighting or when in use.
24. Avoid breathing smoke from the fire and avoid getting it into your eyes.
25. This appliance should be thoroughly inspected and cleaned on a regular basis by trained personnel.
26. CAUTION: The gas pressure regulator provided with this appliance must be used. This regulator assembly is set for an outlet pressure of 250 inches water column (~9 PSI).
27. The LP-gas supply cylinder must be disconnected when this appliance is not in use.
28. Connect only to cylinders marked PROPANE or LPG.
29. Do NOT use for cooking food.
30. Do NOT use I.T.S. when the temperature is below 32 degrees Fahrenheit (0 degrees Celsius).
31. Do NOT drop I.T.S. In case you drop your I.T.S Unit inspect thoroughly before use.
30. **Death, serious injury or damage to property** may occur if the above is not followed exactly.

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SAFETY FIRST!

1. Read and become familiar with this entire manual, especially the preceding warnings and following precautions.
2. If you are unsure of anything in these instructions, STOP and contact 1-888-4BULLEX for assistance.
3. **Caution: This appliance is for outdoor use only (outside any enclosure).**
4. Always maintain at least 40 feet clearance (side) from combustible materials (for example wood, paper, gasoline).
5. Always place I.T.S. on a hard and level surface.
6. Do not use if the wind velocity is greater than 10 miles per hour.
7. Unit will operate at reduced efficiency below 40ºF (5ºC). Do not use below 32ºF (0ºC).
8. Keep sprinklers and other water sources away from burner and controls.
9. Always use extreme caution when near I.T.S. Alert both children and adults to the hazards of high temperatures, especially to avoid burns or clothing catching fire.
10. No one should be in the vicinity of I.T.S. unless under strict supervision.
11. Any guard, such as the pilot housing or other protective device, that is removed for servicing must be replaced prior to operating the I.T.S.
12. Do not alter I.T.S. in any manner.
13. The pressure regulator and hose assembly supplied with the appliance must be used and replacements must be those specified by the manufacturer.
14. Inspect I.T.S. before each use. If a damaged part is detected, do not operate until an original equipment replacement part has been properly installed. Use of unauthorized parts will void warranty and create an unsafe condition.
15. Do not attempt to use this appliance without a functional factory supplied gas regulator in place. If regulator becomes damaged, contact 1-888-4BULLEX.
16. During operation, do not touch burner assembly. If using I.T.S. with optional BullEx Props, do not touch or remove Props while in operation Wait until all surfaces have cooled before handling. The surface of I.T.S. and optional BullEx Props can reach temperatures approaching 1600ºF.
17. After shutdown, do not touch burner assembly until I.T.S. has completely cooled.
18. Use protective work gloves at all times when handling optional BullEx Props.
19. Only use BullEx manufactured optional Props. When using BullEx Props, the I.T.S. must be set to “Prop Mode”. Do not attempt to use Props in normal or full mode. Do not attempt to use Props in “evacuate” training mode.
20. After shutdown, do not touch burner assembly until I.T.S. has completely cooled.
21. This product should not be used with any fuel other than propane. Use of other fuels is dangerous and will void your warranty.
22. I.T.S. must be used with water. Running the system without water or any other liquid will void the warranty.
23. Do not use in an explosive atmosphere. Keep I.T.S. away from areas where flammable liquids, gasoline, vapors, or explosives are stored or used.

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INTELLIGENT TRAINING SYSTEM SPECIFICATIONS

This appliance (The Intelligent Training System or I.T.S.) is intended to provide safe and cost effective live-fire extinguisher training. I.T.S. should be used outdoors on a non-combustible surface with adequate clearance from any combustible or flammable materials**. I.T.S. is not intended to be used as a heater, fireplace or cooking appliance and should not be used as such.**

The maximum inlet gas supply pressure is ½ PSI or 14 inches water column. I.T.S. is designed to be supplied by a standard 20 lb. propane cylinder. The regulator and supply hose provided with I.T.S. should be attached directly to the 20 lb. propane cylinder.

Parts List: To order replacement parts contact BullEx Digital Safety at 518-689-2023.

Number	Part Description	Part Number
1	Intelligent Training System (base unit)	ITS004A
2	SmartExtinguisher™ Training Extinguisher	SE001
3	Handheld Controller	HC001
4	Controller Cable	CC001
5	Power Cable	PC001
6	Propane hose and regulator assembly	PH001
7	Equipment Carrying Case	EC001
8	Water Measuring Cup	WC001
9	Funnel	FF001
10	Sensor Guard	SG001
11	User manual	UM001
12	Training CD/DVD	CD001

I.T.S. Accessories Specifications

Air Compressor
- 150 psi max (fill SmartExtinguishers™ with 100 psi)
- Minimum tank size of 6 gallons
- Minimum motor power of 1/3 HP

Air Regulator for SCBA bottle
- Adjustable Regulator 5000 max psi
- Hand tight SCBA attachment

Air Accessories
- 25’ hose w/air compressor or 10’ hose w/air regulator
- Dual-Headed Angled Air Chuck
- Quick Disconnect Air Fittings with necessary bushings

I.T.S. Shipping Case
- Interior Dimensions of 30” x 25” x 15”

Booster Pack (Higher peak amp and amp hour ratings are highly recommended)
- 12 VDC
- Peak Amp Minimum of 2 amps
- Amp Hour Minimum rating of 17 amp hours

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BULLEX DIRECT OPTIONAL ACCESSORIES

	3X SmartExtinguisher™ Aluminum rechargeable training extinguisher. Discharges 3 times before requiring a water refill. **5X SmartExtinguisher™** Yellow or Red rechargeable training extinguisher. Discharges 5 times before requiring a water refill. **7X SmartExtinguisher™** Yellow or Red rechargeable training extinguisher. Discharges 7 times before requiring a water refill.
	Air Compressor (6 gal.) or Air Regulator 6 Gallon upright air compressor with a maximum 150 PSI. (Fill SmartExtinguishers™ to 100 PSI). Equipped with a 3 HP motor. Ships with premium air hose (50 ft.) and brass fitting kit. Air Regulator for charging extinguishers with SCBA bottle. Ships with 10 ft. air hose.
	Battery Power Pack (17 Amp hr) Power I.T.S. without a vehicle using these portable, rechargeable power packs. Powers I.T.S. for 8 hours.
	I.T.S. Transport Case This black industrial grade high impact plastic case can be used to quickly and easily transport I.T.S. to and from various sites to conduct training. Includes a retractable pull handle and built in wheels. Locking latches provide safe and secure storage of the system when not in use. Transports: I.T.S. Base Unit, handheld controller, funnel and measuring cup. **Accessories Transport Case** Additionally, BullEx offers a black industrial grade high impact plastic case that can be used to store and transport all of your Intelligent Training System accessories. This case is the same style as the I.T.S. Transport case.

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BULLEX DIRECT SERVICE PACKAGES

Basic Package

Package Includes: Annual Eight Point Inspection & Maintenance Plan

1. Visual Inspection
2. General Cleaning
3. Clean Pilot Orifices (replace pilot assembly if needed)
4. Leak Test
5. Test Sensors (replace if needed)
6. Visual Inspection of SmartExtinguisher™
7. Diagnostics Test
8. Software Updates As Needed

- BullEx pays return ground shipping

Premium Package (must be purchased within 30 days of receipt of system)

Package Includes: Annual Eight Point Inspection & Maintenance Plan

1. Visual Inspection
2. General Cleaning
3. Clean Pilot Orifices (replace pilot assembly if needed)
4. Leak Test
5. Test Sensors (replace if needed)
6. Visual Inspection of SmartExtinguisher™
7. Diagnostics Test
8. Software Updates As Needed

Plus - Complete Parts and Labor Replacement Coverage

- Does not cover neglect such as dropped or crushed units
- BullEx pays return ground shipping

Elite Package (must be purchased within 30 days of receipt of system)

Package Includes: Annual Eight Point Inspection & Maintenance Plan

1. Visual Inspection
2. General Cleaning
3. Clean Pilot Orifices (replace pilot assembly if needed)
4. Leak Test
5. Test Sensors (replace if needed)
6. Visual Inspection of SmartExtinguisher™
7. Diagnostics Test
8. Software Updates As Needed

Plus - Complete Parts and Labor Replacement Coverage

- Does not cover neglect such as dropped or crushed units
- BullEx pays return ground shipping

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FUEL REQUIREMENTS

Use only the pressure regulator and hose assembly supplied with I.T.S. or a replacement pressure regulator and hose assembly specified by BullEx Digital Safety.

NOTE: A standard 20 lb. L.P. (liquid propane) cylinder is required when operating I.T.S. L.P. cylinders can be purchased separately at an independent dealer.

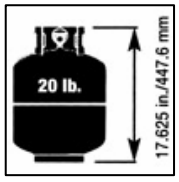
Liquid Propane Tank Information:

- Never use a dented or rusted L.P. tank or cylinder with a damaged valve.
- L.P. cylinders must be equipped with an O.P.D. (Overfilling Prevention Device). The device shuts off the flow of gas to a cylinder after 80% capacity is reached. This limits the potential for release of gas when the cylinder is heated, creating a fire or possible injury.
- The L.P. gas supply cylinder must be constructed and marked in accordance with the specifications for L.P. gas cylinders of the U.S. Department of Transportation (DOT) or the National Standard of Canada, CAN/CAS-B339, "Cylinders, Spheres and Tubes for the Transportation of Dangerous Goods."
- The usage must conform with local codes or, in absence of local codes, with the Standard for Storage and Handling of Liquefied Petroleum Gases, ANSI/NFPA 58 and the Natural Gas and Propane Installation Code, CSA B149.1;

L.P. TANK USE

When turning the L.P. cylinder on, make sure to open the valve slowly and completely to insure proper gas flow. Most gas tanks are equipped with a leak detector mechanism internal to the tank, when gas is allowed to escape rapidly it shuts off the gas supply. Opening the valve rapidly may simulate a gas leak, causing the safety device to activate, restricting gas flow causing low flames. Opening the valve slowly will insure this safety feature is not falsely triggered.

The propane cylinder should always be placed upright, as shown in the adjacent diagram, when supplying the Intelligent Training System so as to draw only propane vapor from the cylinder.



Attempting to place the propane cylinder in any other orientation is dangerous and will damage I.T.S. components. This action will void the warranty.

If at any time the L.P. cylinder tips over immediately unplug the power cable; straigthen the cylinder, close the valve on the L.P. cylinder and wait 5 minutes before using the system as liquid propane may have spilled into the regulator. Consult Propane supplier for more safety instructions.

- The propane cylinder must include a collar to protect the cylinder valve.
- Storage of an appliance indoors is permissible only if the cylinder is disconnected and removed from the appliance.
- Cylinders must be stored outdoors in a well-ventilated area out of reach of children. Disconnected cylinders must have threaded valve plugs tightly installed and must not be stored in a building, garage or any other enclosed area.

IMPROPER USE WILL CAUSE A DANGEROUS SITUATION!

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INTELLIGENT TRAINING SYSTEM INTRODUCTION

Pages 11 through 34 contain the usage instructions for the Intelligent Training System. Read these instructions in their entirety before using the system. These operations include:

Pre-Operation Leak Testing

- This section details how to check your propane equipment for leaks before usage. BullEx recommends testing your equipment at least once every six months.

I.T.S. Set-up Instructions

- This section begins with removing the system from its packaging and explains all the set-up instructions for the I.T.S. base unit, including propane supply, power supply, controller connections, filling the burn box, leveling the base unit, and setting the engagement distances for the SmartExtinguishers™.
- There is a section for setting up props as well.

SmartExtinguisher™ Instructions

- This section details SmartExtinguisher™ charging, recharging, and usage.

I.T.S. Usage Instructions

- This section explains how to unlock the controller, how to change the difficulty level and class, how to light the pilot, how to conduct a training evolution and a list of the I.T.S. safety features.
- This section also include selecting “Standard mode” and “Prop mode.”
- This section also includes prop usage instructions.

I.T.S. Shut Down Operations

- This section details shutting down the I.T.S. and packing the system for transportation.

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PRE-OPERATION LEAK TESTING PROCEDURE

Although all gas connections on the appliance are tested prior to shipment, a complete gas tightness check must be performed at the site of use. This is due to possible shifting during transportation, assembly or excessive pressure unknowingly being applied to the unit. Periodically check the whole system for leaks and immediately check the system if the smell of gas is detected.

Do not smoke while leak testing. Extinguish all open flames. Never leak test with an open flame. Mix a solution of equal parts mild detergent or liquid soap and water (or use gas leak detector available at your local plumbing supply store).

Testing procedure:

1. Ensure I.T.S. is unplugged/de-energized. (This ensures the safety shut off valve to the burners and pilot are closed).
2. Connect the propane regulator and hose assembly as directed in the Assembly section.
3. Turn the valve of the L.P. cylinder counterclockwise until fully open.
4. Apply the soap solution to connections of the fuel supply assembly. If no soap bubbles appear, there is no gas leak. If bubbles form at the connections, a leak is detected. If a leak is detected, immediately turn off the gas supply and contact BullEx. Otherwise wipe down system and proceed.
5. Turn off the valve on the top of the L.P. cylinder.
6. Disconnect the propane hose and regulator assembly.
7. Wash off hose assembly with water and towel dry.
8. Wipe down with rag.

Inspect all gas supply fittings before each use and each time the gas supply cylinder is connected to the regulator. Have a qualified service technician leak test the appliance any time a part of the gas system is replaced.

It is recommended to perform a leak test at least twice a year.

Leak Testing Notes:

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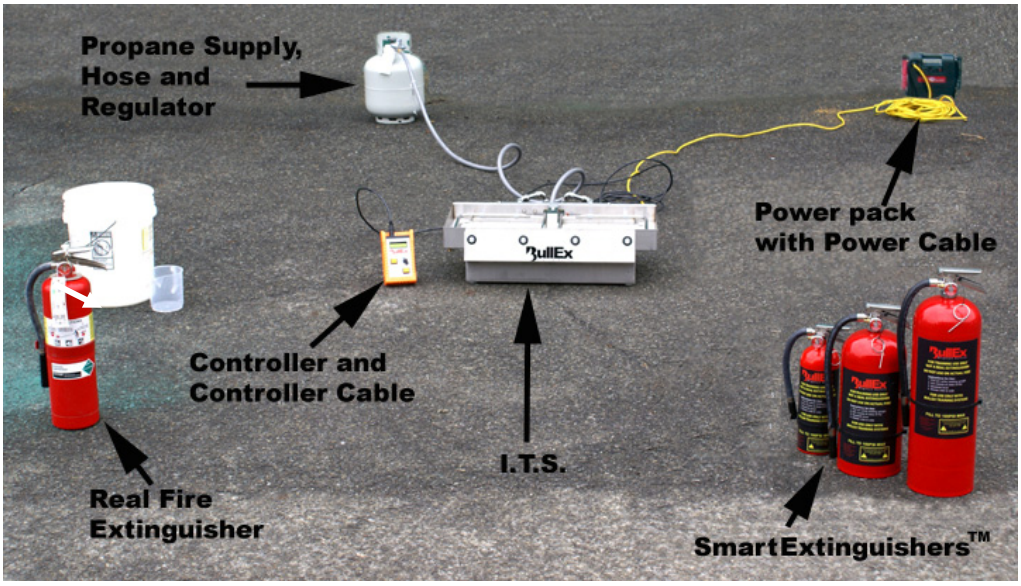
I.T.S. SET-UP INSTRUCTIONS

An Example Setup



The Intelligent Training System base package is shipped in two boxes. One box contains the I.T.S. base unit, user manual, training CD, and sensor guard. The second package contains the SmartExtinguisher™ Training Extinguisher(s), handheld controller, controller cable, equipment carrying case, water measuring cup, funnel, power cable, and the propane supply hose and regulator.

Set-up for Operation:

1. Place the I.T.S. base unit in an open area away from all combustible materials. I.T.S. should be placed downwind. The wind should be at the trainee's back blowing into the front of the system.

I.T.S. must only be used outside

Figure 1: Removing the sensor housing

2. Remove the sensor guard by pulling the center of the guard above the "ll" in BullEx. *See Figure 1*. Attempting to remove the sensor guard at another location will be more difficult.
3. Inspect the entire I.T.S. system for any signs of physical damage.

If there is any sign of physical damage STOP and call BullEx's customer support line: 1-888-4BULLEX

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4. Plug the male end of the controller cable (black cable) into the appropriate connector on the rear of the I.T.S. base unit. *See Figure 2*
5. Plug the female end of the controller cable into the connector on the Handheld Controller.
6. Attach the power cable (yellow cable) to the rear of the I.T.S. base unit by lining up the guide marks on the inside of the plug and screwing the connectors together. *See Figure 3*

Figure 2: Controller cable

Figure 3: Power Cable

7. Place the propane cylinder 8-10 ft. behind the I.T.S. base unit.
8. **Locate the gas hose in a safe position; locate the hose out of pathways where people may trip over it or in areas where the hose may be subject to accidental damage.**
9. Ensure the valve on the propane cylinder is closed completely.
10. Thread the propane fitting into the cylinder (regulator side). Tighten the connection until snug. *See Figure 4*
11. Connect the quick disconnect end of the propane hose to the quick disconnect propane inlet on the rear of the I.T.S. base unit. To do this pull the front of the coupling back and insert the coupling into the plug. Push it forward until a click is heard. *See Figure 5*

Figure 4: Propane hose threaded inlet

Figure 5: Propane hose QD outlet

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12. Slowly open the valve on the propane cylinder.
13. Fill I.T.S. Burn Box with water.(See Page 13 For More Instructions)
14. Plug the male end into a 12 Volt receptacle. (A vehicle's 12V cigarette lighter *Figure 6,* or "12V power pack" *Figure 7,* may be used – see I.T.S. Accessories Specifications).

NOTE: Any vehicle, power supply, or combustible materials should be a minimum of 40 ft. from the I.T.S. base unit.

Figure 6: 12VDC car outlet

Figure 7: 12VDC battery pack

⚠ WARNING

Only use Yellow Power Cable with 12 VDC source.
DO NOT use with 110 V inverter, transformer, or any other similar device.
Doing so will void the warranty and may potentially cause a dangerous situation.

The appliance should be inspected before each use and at least annually by a qualified service person. More frequent cleaning may be required as necessary.

It is imperative that the burners and "burn box" on I.T.S. be kept clean.

The pressure regulator and hose assembly supplied with the appliance MUST be used and replacement pressure regulators and hose assemblies must be those specified by the appliance manufacturer. DO NOT alter any part of the hose assembly!

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⚠ CAUTION

This appliance shall be used only outdoors in a well-ventilated space and shall not be used in a building, garage or any other enclosed area.

Inspect the burners before each use of the appliance. Make sure the quick disconnect plug (See Figure 5) on the system is solidly secured.

The burner must be replaced prior to the appliance being put into operation if it is evident that the burner is damaged. The replacement burner shall be that specified by BullEx.

I.T.S. must be located at least: 8ft -10 ft in the U.S.; or 10ft. (3m) in Canada, from any propane gas container.

15. Before operating the system for the first time ensure that the proper pre-operation leak testing has been completed as directed in the "Pre-Operating Leak Testing" section.
16. Inspect the appliance before each use and at least annually by a qualified service person.
17. The hose assembly shall be visually inspected prior to each use of the appliance. If it is evident there is excessive abrasion or wear, or the hose is cut, it must be replaced prior to the appliance being put into operation. The replacement hose assembly shall be that specified by the manufacturer.

Additional Equipment

I.T.S. requires a compressed air source capable of providing 100 PSI consistently during the use of the system. A compressor or a regulated SCBA bottle may be used. See the I.T.S. accessories specifications section for recommended equipment.

18. Setup the compressed air source and water source.

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19. **IMPORTANT! I.T.S. must be filled with water to the "Overflow" marks on the sidewalls of the Burn Box before use.** This will prevent overheating. Operating the system without filling with water as directed in this manual will void the warranty. *Figures 8 and 9 below*
    - **i. Do NOT pour water over the pilot assembly**
    - **ii. Do NOT pour water into the burners**
    - **iii. Only pour water into open areas inside the burners**

Figure 8: Filling ITS' burn box

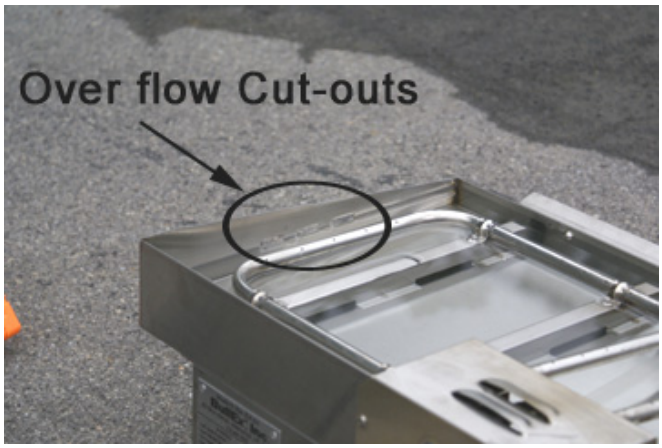

Figure 9: Overflow cut-outs

20. **Level I.T.S – The base unit must be level prior to use.**
    - i. Using the adjustable feet, ensure I.T.S. is stable and level.
    - ii. The feet may be adjusted from the bottom of I.T.S. by screwing them in and out. Use water in the burn box to determine if I.T.S. is level.
    - iii. Use Overflow Cut-outs to see if the I.T.S. Unit is level. This can be done by checking the water level on either side of the I.T.S. unit. The water should be same height on both sides relative to the overflow cut-outs.
21. **Set the Distance Mark**
    - i. Measure 6 ft. from the front of the I.T.S. unit and mark the ground. This distance is where the trainee will stand when using a 3X SmartExtinguisher™ to extinguish the flame.
    - ii. Measure 8 ft. from the front of the I.T.S. unit and mark the ground. This distance is where the trainee will stand when using a 5X or 7X SmartExtinguisher™ to extinguish the flame.
    - iii. Trainees should remain behind these marks at all times during training with I.T.S.

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PROP SET-UP INSTRUCTIONS

The Intelligent Training System Mark 2 can be fitted with props for additional training situations. The prop kit includes a Trash Can, Stove Top, and Motor. All props fit onto the I.T.S.M2 easily using the Prop Mount.

Set-up for Prop Operation

1. To set-up the props begin by following all the set-up steps found on pages 12-16.
2. After the system **filled with water** and leveled, place the Prop Mount in the burn box as seen in *Figure 10* to the right.
3. The Prop Mount has 4 holes used for the attachment of the desired prop as seen in *Figures 10 and 11*. *Figure 11* is a close up. There are 2 holes in the top right and left corners of the burner opening and two holes below the bottom center of the burner opening.
4. All 3 props have pegs in the same positions on the bottom of the prop. See *Figure 12*. The different positions of the pegs insure the props can not be installed backwards.
5. Install the back pegs into the rear holes of the Prop Mount as seen in *Figure 13*. Then place the front pegs into the Prop Mount to finish the prop set-up.
6. The Trash Can is correctly set up in *Figure 14*.

Figure 10: Prop Mount in ITS

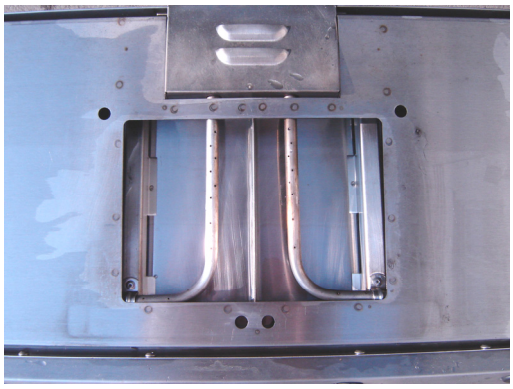
Figure 11: Close up of mount positions

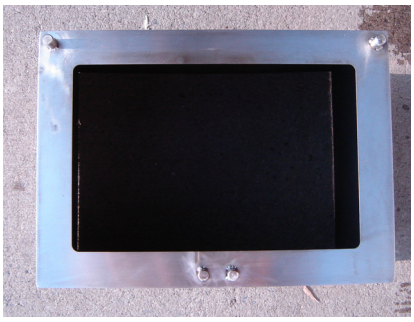
Figure 12: Bottom of trash can with mounting pegs

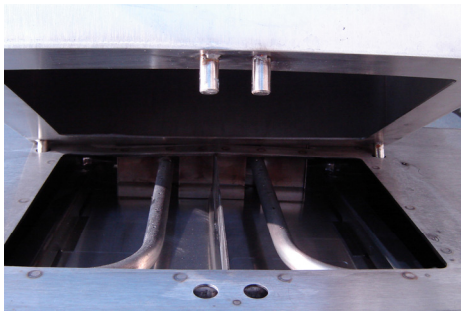
Figure 13: Rear pegs in place

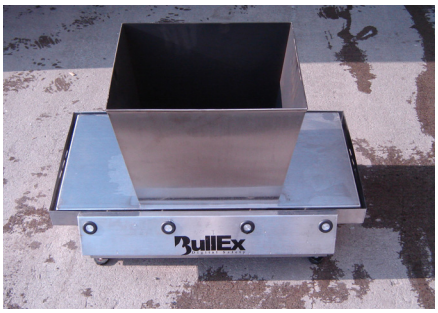

Figure 14: Correctly mounted Trash Can prop

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PREPARING THE SMARTEXTINGUISHER™

The SmartExtinguisher™ must be charged prior to each training evolution with I.T.S. Currently, there are three types of SmartExtinguishers™. The 3X aluminum, 5X stainless steel (silver, red or yellow), and 7X stainless steel (silver, red or yellow). The number corresponds to the amount of discharges one can get from a cylinder before having to refill it with water.

When you are done using your SmartExtinguisher™ Bullex recommends that you wipe the head stock off, as hard water deposits or some rust may accumulate. This rust does not affect functionality or performance, only appearance.

7X 5X 3X

General Extinguisher Usage (3X Example)

1. Remove the extinguisher's headstock.
2. Fill extinguisher with water. (Described on page 17)
3. Replace the extinguisher's headstock; the valve nut only needs to be hand tight.
4. Charge extinguisher with compressed air source to 100 psi. (Described on page 18)
5. Discharge extinguisher on I.T.S.' flame during a training evolution.
6. Recharge extinguisher with air to 100 psi.
7. Discharge extinguisher on I.T.S.' flame during a training evolution.
8. Recharge extinguisher with air to 100 psi.
9. Discharge extinguisher on I.T.S.' flame during a training evolution.
10. Refill with water as necessary.

NOTE: The water recharge is only required once every 3 compressed air recharges for the 3X SmartExtinguisher™, once every 4-5 compressed air recharges for the 5X SmartExtinguisher™ and once every 6-7 times for the 7X SmartExtinguisher™.

The compressed air recharge is required after each extinguisher discharge!
Water recharges are required every 3 extinguisher discharges for the 3X SmartExtinguisher™, every 4-5 extinguisher discharges for the 5X SmartExtinguisher™, and every 6-7 extinguisher discharges for the 7X SmartExtinguisher™.

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Water Recharge for the 3X aluminum SmartExtinguisher™

1. Unscrew the headstock from the SmartExtinguisher™.
2. Fill the water measuring cup to 1.25 Liters using the 1L measuring cup.
3. Pour the water into the SmartExtinguisher™.
4. Screw the headstock back into the extinguisher cylinder until the o-ring is compressed.
5. Replace the extinguisher pin.
6. Stand 6 ft. away from the unit
7. Discharge Time: 8 – 9 seconds

Water Recharge for the 5X stainless steel SmartExtinguisher™

1. Unscrew the headstock from the SmartExtinguisher™.
2. Fill the water measuring cup to 4 Liters using the 1L measuring cup.
3. Pour the water into the SmartExtinguisher™.
4. Screw the headstock back into the extinguisher cylinder until the o-ring is compressed.
5. Replace the extinguisher pin.
6. Stand 8 ft. away from the unit.
7. Discharge Time: 10 – 11 seconds

Water Recharge for the 7X stainless steel SmartExtinguisher™

8. Unscrew the headstock from the SmartExtinguisher™.
9. Fill the water measuring cup to 6 Liters using the 1L measuring cup.
10. Pour the water into the SmartExtinguisher™.
11. Screw the headstock back into the extinguisher cylinder until the o-ring is compressed.
12. Replace the extinguisher pin.
13. Stand 8 ft. away from the unit.
14. Discharge Time: 13 – 14 seconds

Compressed air recharge

Once the water recharge procedure is completed, the SmartExtinguisher™ must be charged with compressed air. A compressed air source with a standard Schrader valve air-chuck, regulated between 100 PSI and 110 PSI is required to recharge the SmartExtinguisher™. The compressed air charge is the same no matter which SmartExtinguisher™ is being used.

⚠ DANGER

Do NOT over charge the SmartExtinguisher™. Over charging the SmartExtinguisher™ may cause explosion.

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Compressed Air Recharge Instructions (Boosting)

1. Locate the Schrader valve (a Schrader valve is what is used on an automobile tire for filling) on the SmartExtinguisher™ headstock.
2. Depress the Schrader valve on the SmartExtinguisher™ with the standard Schrader valve air-chuck that is included. (Ensure that the compressed air source DOES NOT EXCEED 110 PSI).
3. The air can be heard entering the SmartExtinguisher™ as it disburses through the water. Continue to fill the extinguisher until the noise stops and the pin of the gauge is in the middle of the green (See Figure 17 below.)

Figure 15: Uncharged

Figure 16:Under charged

Figure 17: Correctly charged

The gauge in Figure 15 shows that a SmartExtinguisher™ is empty. The gauge in Figure 16 shows that a SmartExtinguisher™ is under-pressuriezed and is not ready to be used with your I.T.S. Unit. The gauge in Figure 17 shows a pressurized SmartExtinguisher™, which is ready for use.

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USING THE INTELLIGENT TRAINING SYSTEM MARK 2

IMPORTANT! THE BURNER FLAMES AND PILOT CAN BE SHUT DOWN INSTANTLY AT ANY TIME BY RELEASING THE IGNITION SWITCH.

⚠ WARNING

Always keep your face and body as far away from I.T.S. as possible when lighting. The I.T.S. system reduces risk for flashbacks but does not entirely eliminate this risk.

IMPORTANT! When turning the gas supply valve on, be sure to turn the knob very SLOWLY until it is completely open.

Unlocking the Controller

1. Make sure that none of the push buttons on the Handheld Controller are depressed.
2. Make sure the gas supply valve located on top of your L.P. tank is open.
3. When I.T.S. is powered up, the Handheld Controller will display, "Enter start-up code."
4. **IMPORTANT!** To use I.T.S. one must first enter a button sequence that ensures the operator has read the User's Manual.
    a. Enter the following button sequence:
        i. Move selector knob to "FULL"
        ii. Press and release the "FLARE UP" switch
        iii. Move the selector knob to "A"
        iv. Press and release the "FLARE UP" switch
    b. This will activate the system and Handheld Controller will display, "Level 2 EStop"
5. I.T.S. is now ready for use.

Figure 18: ITS controller

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Selecting Prop Mode or Standard Mode

After entering the sequence the controller will ask the user to select "Standard mode" or "Prop mode."

- If the trainer is not using available props then turn the selector switch to "A" for "Standard mode" and press the "FLARE UP" button.
- If the trainer is using available props then turn the selector switch to "B" for "Prop mode" and press the "FLARE UP" button. **Continue to page 28 for Prop information.**

Figure 19: Standard and Prop Mode

⚠ CAUTION

DO NOT attempt to use "Standard mode" with any of props installed. Every time "Standard mode" is selected the screen will display the reminder message to the right. Press the "FLARE UP" button to continue.

If props are used with "Standard mode" selected the I.T.S will display "Not in Prop mode Cycle Power," shut down the controller, and beep continuously until the power is cycled.

Figure 20: Standard mode reminder

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Selecting the Difficulty Level and Class (Standard Mode)

Setting the Difficulty Level

1. To select a difficulty level, ensure that the IGNITION button is NOT depressed then press and hold the "FLARE UP" button. (If the IGNITION button is depressed and the "FLARE UP" button is pressed, this will immediately light the burners).
2. After holding down only the "FLARE UP" button for two seconds the Handheld Controller will display "Difficulty Set: Level X" (where X is the difficulty level). *See Figure 21.*
3. While continuing to hold the "FLARE UP" button down, use the selector knob to select a difficulty level. The levels are displayed in red next to the class. (1 [easiest] – 4 [hardest]).
4. To set the difficulty level, release the "FLARE UP" button.
5. The selected difficulty level will be displayed on the top line of the Handheld Controller display.

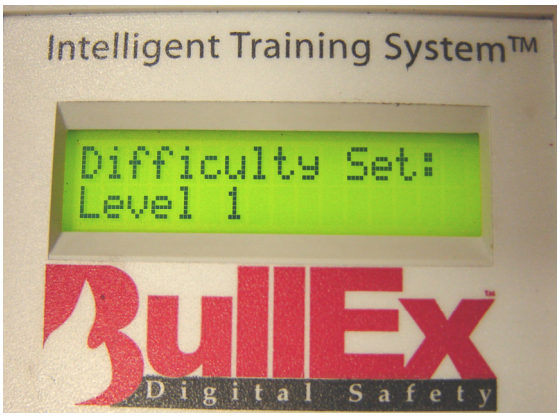

Figure 21: Setting the difficulty

Changing the Class of Fire Simulation

The Intelligent Training System M2 can simulate the way class A, B and C fires respond to a live fire extinguisher. For example, Class A fires respond by gradually extinguishing with the proper application of a dry-chemical extinguisher, while Class B fires are easily "knocked down" by a single sweep, but are quick to "flare up" if enough extinguishant is not discharged. I.T.S. has the ability to simulate these differing responses.

1. Use the selector switch to select the class of fire to simulate.
   The selector switch may only be switched between training evolutions.
   The selector switch may NOT be switched during a simulation.
   In order to change the mode the bottom line of the controller must say: "Ready to Start"
2. Switch to "A" for Class A "Common Combustibles" fires
3. Switch to "B" for Class B "Flammable Liquids" fires
4. Switch to "C" for Class C "Electrical" fires.
5. The Class will be displayed on the top line of the Handheld Controller.

When the selector switch is set to "FULL,", and a training evolution is conducted, the sensors are disabled. I.T.S. will not respond to the SmartExtinguisher's™ signal and the flames will remain at full until the evolution is stopped. "Sensors Disabled" will be displayed on the top line of the Handheld controller screen.

Note: The instructor determines a suitable mode and level for the trainee.

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Lighting the Pilot (Standard Mode)

NOTE: Before attempting to start up system, move away from the system.

1. When the level and class of fire have been selected and controller's screen looks similar to *Figure 22* the system is ready to be lit.
2. To light the system, **press and hold** the IGNITION button on the Handheld Controller.
3. The system will beep while I.T.S.M2 begins to light the pilot.
    a. You will also hear clicking, which is the electronic ignition attempting to light the pilot.

Figure 22: Ready to light the system

If the pilot does not light in 30 seconds, release the "IGNITION" button and wait 1-2 minutes before trying again.

When first lighting the pilot, the propane hose is filled with air which must be "purged" by the propane. It can take up to one (1) minute to light the pilot the first time during a training session.

4. Once the pilot has been successfully lit the system will beep again and light the burners.
5. Continue to hold the IGNITION button. The system will beep three times in quick succession and start the timer on the HandHeld Controller.
6. Discharge the SmartExtinguisher™ any time after the three quick beeps.

NOTE: If the pilot does not successfully light, call 888-4BULLEX for assistance.

The Ignition Button is an Emergency Stop Button ("Deadman Switch") and must be held down the entire time the system is running. Letting go of that button trips the emergency stop and prevents propane from entering the system. Releasing this button will disengage the pilot and stop all gas flow.

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Using the "Flare Up" button (Standard Mode)

1. At any point during a training evolution the "FLARE UP" button can be pressed to immediately relight the burners.
2. The burners will return to their full flame and the controller will display "Flare Up!" as seen in *Figure 23* below.
3. The "FLARE UP" button can also be pressed up to three (3) seconds after the flames have been extinguished and it will relight the burners and continue the timer. The timer will continue uninterrupted as if the flames were never extinguished. The screen will display "Flare Up!" as well.

> The "FLARE UP" button can be used to change the difficulty at the trainer's discretion. If one trainee extinguishes the flame too quickly it can be relit using the "FLARE UP" button and they must continue fighting the fire.

Figure 23: Flare Up!

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Extinguisher Training with I.T.S.M2 (Standard Mode)

Training Evolution Preparation:

1. Ensure the desired difficulty level and class are selected.
2. Ensure that the SmartExtinguisher™ is properly charged.
3. Ensure that no unnecessary personnel/animals/items are in the vicinity of I.T.S.
4. Ensure that the trainee is prepared to "extinguish" the fire.

Conducting the Training Evolution:

1. Press and Hold the IGNITION button to light the burners.
    a. You will hear three sets of beeps, one short beep when the button is pressed, another long beep when the pilot lights and the system recognizes the pilot, and three short beeps when the timer starts and the trainee should begin to extinguish the fire.
2. When you hear the three short beeps and the Handheld Controller displays a timer, approach the 6 or 8 ft. mark with the trainee.
3. The trainee should then **P**ull the extinguisher pin, **A**im at the base of the fire (**NOT** the sensors), **S**queeze the handle, and **S**weep the extinguisher.
4. Remain behind the 6 or 8 ft. mark at all times during every training evolution
5. If the trainee properly aims and sweeps the SmartExtinguisher™ the flames will eventually go out and the time it took to extinguish the flame will be displayed.
    a. The Handheld Controller will read "Ext. in XX.X sec Release Ignition"
6. If the trainee does not aim and sweep properly the flames will not fully extinguish.
7. If desired, the "FLARE UP" button can be pressed up to 3 seconds after the flame has been extinguished to relight the burners and continues the training evolution. The timer will continue as if the flames were burning for those 3 seconds.

NOTE: If the trainee does not aim and sweep properly, and the burners are still lit after the SmartExtinguisher is completely discharged, the burners can be shut down by releasing the "E-STOP" switch.

NOTE: If I.T.S.'s burners run at full for more than 30 seconds, it will automatically shut off the burner flames, ending the training evolution. Once I.T.S. has automatically shut down, the system may be restarted by following the previously stated "Conducting the Training Evolution" instructions.

IMPORTANT! THE BURNER FLAMES AND PILOT CAN BE SHUT DOWN INSTANTLY AT ANY TIME BY RELEASING THE IGNITION SWITCH.

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General Training Evolution Procedure:

1. If the trainee does not successfully "extinguish" the flames, the system may be shut down by releasing the IGNITION button.
2. Charge SmartExtinguisher™ appropriately. (Water and/or compressed air recharge between each discharge)
3. Ensure conditions are safe for I.T.S. ignition.
4. Change the Difficulty and Class of Fire Settings if necessary.
5. Prepare the trainee to "extinguish" the fire.
6. Press and hold IGNITION to light the burners.
7. When the Handheld Controller reads "Time XX.X Sec System Running" and the timer starts, the trainee may begin to discharge the SmartExtinguisher™.
8. The flames will automatically shut off if the trainee utilizes the SmartExtinguisher™ appropriately.
9. Recharge the SmartExtinguisher™ and begin the next evolution.

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Selecting the Difficulty Level and Class (Prop Mode)

Setting the Difficulty Level

1. To select a difficulty level, ensure that the IGNITION button is NOT depressed then press and hold the "FLARE UP" button. (If the IGNITION button is depressed and the "FLARE UP" button is pressed, this will immediately light the burners).
2. After holding down only the "FLARE UP" button for two seconds the Handheld Controller will display "Difficulty Set: Level X" (where X is the difficulty level). *See Figure 24.*
3. While continuing to hold the "FLARE UP" button down, use the selector knob to select a difficulty level. The levels are displayed in red next to the class. (1 [easiest] – 4 [hardest]).
4. To set the difficulty level, release the "FLARE UP" button.
5. The selected difficulty level will be displayed on the top line of the Handheld Controller display.

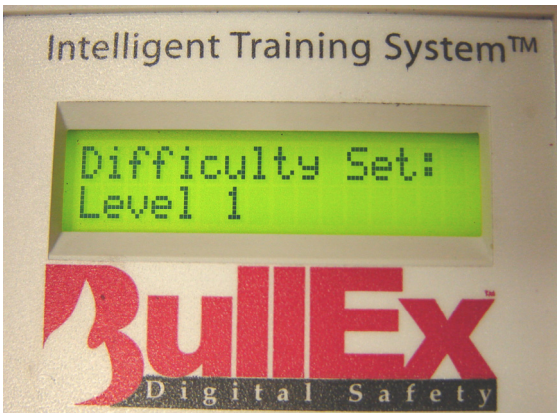

Figure 24: Setting the difficulty

Changing the Fire Response for Different Props

The Intelligent Training System M2 can use props to simulate a trash can fire, stove top fire, or motor fire. The type of prop used is selected the same way in which the class of the fire is selected in "Standard mode."

1. Use the selector switch to select which prop is currently being used.
   The selector switch may only be switched between training evolutions.
   The selector switch may NOT be switched during a simulation.
   In order to change the prop the bottom line of controller must say: "Ready to Start"
2. Switch to "A" for the Trash Can prop.
3. Switch to "B" for the Stove Top prop.
4. Switch to "C" for Motor prop.
5. The prop will be displayed on the top line of the Handheld Controller. See *Figure 25.*

Note: The instructor determines a suitable mode and level for the trainee.

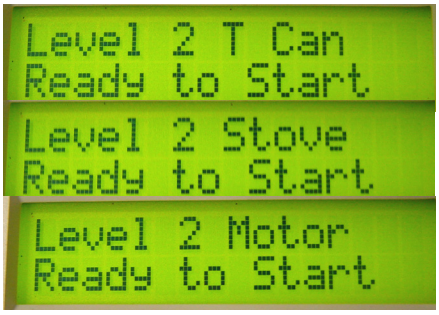

Figure 25: Prop modes

⚠ CAUTION

"FULL" is not utilized when in "Prop mode." If the selector switch is pointing to "FULL" the system will not function. Instead the system will beep and the controller will display "Release Ignition."

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Lighting the Pilot (Prop Mode)

NOTE: Before attempting to start up system, move away from the system.

1. When the level and class of fire have been selected and controller's screen looks similar to *Figure 26* the system is ready to be lit.
2. To light the system, **press and hold** the IGNITION button on the Handheld Controller.
3. The system will beep while I.T.S.M2 begins to light the pilot.
    a. You will also hear clicking, which is the electronic ignition attempting to light the pilot.

Figure 26: Ready to light the system

If the pilot does not light in 30 seconds, release the "IGNITION" button and wait 1-2 minutes before trying again.

When first lighting the pilot, the propane hose is filled with air which must be "purged" by the propane. It can take up to one (1) minute to light the pilot the first time during a training session.

4. Once the pilot has been successfully lit the system will beep again and light the burners and prop.
5. Continue to hold the IGNITION button. The system will beep three times in quick succession and start the timer on the HandHeld Controller.
6. Discharge the SmartExtinguisher™ any time after the three quick beeps.

NOTE: If the pilot does not successfully light, call 888-4BULLEX for assistance.

The Ignition Button is an Emergency Stop Button ("Deadman Switch") and must be held down the entire time the system is running. Letting go of that button trips the emergency stop and prevents propane from entering the system. Releasing this button will disengage the pilot and stop all gas flow.

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Using the "Flare Up" button (Prop Mode)

1. If the "FLARE UP" button is pressed during a training evolution in prop mode the I.T.S. enters "Evacuate Mode!" See *Figure 27.*
2. The flames will then grow to level unsafe to fight with an extinguisher, beyond the incipient stage.
3. This mode is meant to show students a fire in which it is better to evacuate the area than attempt to put the fire out with an extinguisher.
4. Discharging an extinguisher during evacuate mode will cause the system to immediately stop the evolution.

Figure 27: Evacuate Mode!

⚠ CAUTION

Attempting to discharge an extinguisher at I.T.S. while in "Evacuate Mode" will turn the flames off immediately, the display will change to *Figure 28* to the right, and the system will beep continuously for 3 seconds.

The alarm will reset itself after 3 seconds and training can continue.

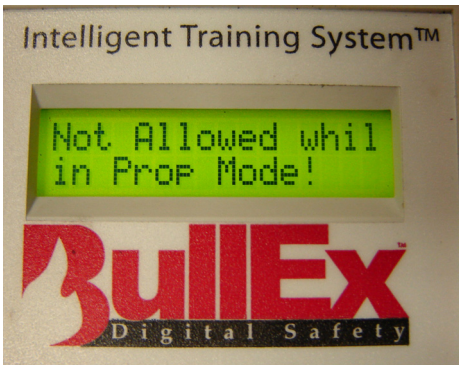

Figure 28: Evacuate warning

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Extinguisher Training with I.T.S.M2 (Prop Mode)

Training Evolution Preparation:

5. Ensure the desired difficulty level and prop mode are selected for prop being used.
6. Ensure that the SmartExtinguisher™ is properly charged.
7. Ensure that no unnecessary personnel/animals/items are in the vicinity of I.T.S.
8. Ensure that the trainee is prepared to "extinguish" the fire.

Conducting the Training Evolution:

8. Press and Hold the IGNITION button to light the burners inside the prop.
    a. You will hear three sets of beeps, one short beep when the button is pressed, another long beep when the pilot lights and the system recognizes the pilot, and three short beeps when the timer starts and the trainee should begin to extinguish the fire.
9. When you hear the three short beeps and the Handheld Controller displays a timer, approach the 6 or 8 ft. mark with the trainee.
10. The trainee should then **P**ull the extinguisher pin, **A**im at the prop (**NOT** the sensors), **S**queeze the handle, and **S**weep the extinguisher.
    a. To extinguish the Trash Can prop, aim into the trash can from 8 feet away.
    b. To extinguish the Stove Top, aim into the pot and at the burner.
    c. To extinguish the Motor, aim all over the motor.
11. Remain behind the 8 ft. mark at all times during every training evolution
12. If the trainee properly aims and sweeps the SmartExtinguisher™ the flames will eventually go out and the time it took to extinguish the flame will be displayed.
    a. The Handheld Controller will read "Ext. in XX.X sec Release Ignition"
13. If the trainee does not aim and sweep properly the flames will not fully extinguish.

NOTE: If the trainee does not aim and sweep properly, and the burners are still lit after the SmartExtinguisher is completely discharged, the burners can be shut down by releasing the "E-STOP" switch.

NOTE: If I.T.S.'s burners run at full for more than 30 seconds, it will automatically shut off the burner flames, ending the training evolution. Once I.T.S. has automatically shut down, the system may be restarted by following the previously stated "Conducting the Training Evolution" instructions.

IMPORTANT! THE BURNER FLAMES AND PILOT CAN BE SHUT DOWN INSTANTLY AT ANY TIME BY RELEASING THE IGNITION SWITCH.

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General Training Evolution Procedure:

10. If the trainee does not successfully "extinguish" the flames, the system may be shut down by releasing the IGNITION button.
11. Charge SmartExtinguisher™ appropriately. (Water and/or compressed air recharge between each discharge)
12. Ensure conditions are safe for I.T.S. ignition.
13. Change the Difficulty and Class of Fire Settings if necessary.
14. Prepare the trainee to "extinguish" the fire.
15. Press and hold IGNITION to light the burners.
16. When the Handheld Controller reads "Time XX.X Sec System Running" and the timer starts, the trainee may begin to discharge the SmartExtinguisher™.
17. The flames will automatically shut off if the trainee utilizes the SmartExtinguisher™ appropriately.
18. Recharge the SmartExtinguisher™ and begin the next evolution.

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Safety Features

I.T.S. has many built-in safety features. It is important that the operator be familiar with all safety procedures and precautions.

Emergency Stop / Deadman Switch

The IGNITION switch acts as a deadman switch for the propane gas supply to I.T.S. The INGITION switch must be depressed for any gas to flow to the pilot or burners. If at any time the IGNITION switch is released, the propane will automatically be shut off to the pilot or burners. In case of an emergency or unsafe situation, release the IGINITION switch to shut-down the unit.

Tilt Sensor

I.T.S. is equipped with a sensor that can determine if I.T.S. has been leveled properly during setup. If I.T.S. is not leveled correctly the tilt sensor will not allow the system to start-up.
The Handheld Controller will read "Error 211 Tilt!"

To reset this alarm during set up, disconnect all cables and hoses from I.T.S. and properly level the base unit. Follow the procedure in "Preparation Instructions" to restart the system.

The tilt sensor will also alarm if the unit is knocked or bumped.
The Handheld Controller will read "Error 211 Tilt!"

To reset this alarm after being bumped, release the IGNITION switch and ensure that the person or object that struck I.T.S. is safe. Inspect I.T.S. for any damage that may have been caused by the collision. If damage is found, do not use I.T.S. and contact BullEx for further support. If no damage is found, ensure the system is set-up correctly for continued use and attempt to re-ignite the pilot per the "Igniting the Pilot" section.

⚠ CAUTION

Use of BullEx Props with I.T.S. requires proper settings be used on the hand held controller.

Do not attempt to use BullEx Props with "Standard mode", "FULL mode", or "evacuate mode" settings.

Do not attempt to use I.T.S. without BullEx Props when set to "prop mode"

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SHUT DOWN OPERATION

1. To shut down the Intelligent Training System release the IGNITION button.
2. Turn off the L.P. cylinder gas supply valve located on top of the 20 lb. L.P. gas tank by turning the knob clockwise until snug.
3. Loosen the drain cock underneath the "burn box" and drain the water from I.T.S.
4. Unplug the power cable (yellow) from the 12V power supply.
5. Unscrew the power cable from the rear of the I.T.S. base unit.
6. Unplug the Handheld Controller cable from the controller.
7. Unplug the Handheld Controller cable from the rear of the I.T.S. base unit.
8. Release the propane hose quick disconnect from the rear of the I.T.S. base unit.
9. Unscrew the propane hose/regulator assembly from the L.P. cylinder.
10. **IMPORTANT! WHEN OPERATING, SURFACES OF I.T.S. REACH EXTREMELY HIGH TEMPERATURES. Wait until I.T.S. is completely cooled before touching any surfaces. The operator should wait a minimum of 15 minutes before handling. When the water has drained out of "burn box" (step 3) the system will be cool.**

Only when I.T.S. has completely cooled for at least 20 minutes:

11. Wipe down any soot-covered areas with a cloth and water
    a. Be sure to clean the burners and remove any deposits, especially around the burner holes.
12. Replace the sensor guard by holding it in position and pressing the top of the guard above the "ll" in BullEx, the guard will snap into place. *See Figure 29.*
13. Place I.T.S. in a secure and safe place for transportation

Figure 29

DANGER

Wear protective gloves at all times when handling optional BullEx Props. The surface of BullEx Props can reach temperatures approaching 1600ºF. Thoroughly cool I.T.S. with water before handling.

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SYSTEM TRANSPORTATION

After performing the steps in the "Shut Down Procedure" the system is ready to be transported. When transporting the system there are a few procedures that should be followed.

1. When transporting I.T.S. the self-leveling feet should be screwed in as much as possible. If they are left extended they could be bent upon dropping or severe contact with another object.
2. Ensure that the sensor guard is in place.
3. Do not transport I.T.S. by grabbing or picking it up by any other means except the handle. Picking it up any other way could damage the system and void the warranty.
4. When transporting SmartExtinguishers™ one MUST de-pressurize them. It may be illegal to transport any kind of pressurized cylinder. BullEx recommends that when transporting the SmartExtinguishers™, one removes the headstock to ensure they are de-pressurized and properly pack them into the accessories carrying case.
5. Empty water from SmartExtinguishers™ and dry before transporting.
6. When using an I.T.S. transport case the unit should be completely wiped down or allowed to dry before it is stored in the transport case. The transport cases hold moisture that can evaporate and recollect on the controller which could damage the LCD screen or other components.

Do NOT place anything on top of I.T.S. during storage or transportation.

⚠ CAUTION

Anyone in proximity to the Intelligent Training System should be alerted to the hazards of high surface temperatures and should stay away to avoid burns or clothing ignition.

People or animals should not be in the area of the appliance without strict supervision.

Storage of an appliance indoors is permissible only if the cylinder is disconnected and removed from the appliance.

Cylinders must be stored outdoors in a well-ventilated area and out of reach of children. Disconnected cylinders must have threaded valve plugs tightly installed and must not be stored in a building, garage or any other enclosed area.

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MAINTENANCE INSTRUCTIONS

General Maintenance

Surfaces of the appliance may be cleaned with a general household cleaner/degreaser. Only clean I.T.S. when it is not in use or plugged in.

Do not use petroleum-based cleaners to clean any components of the appliance.

It is recommended that the burners and "burn box" be cleaned after each use of I.T.S. The burners and "burn box" may be wiped clean with a cloth and water.

Inspect the burner before each use of the appliance.

If it is evident that the burner is damaged, the burner must be replaced prior to the appliance being put into operation. Examples of damage to the burner include but are not limited to rust, pits, cracks, ruptures or tears. The replacement burner shall be specified by the manufacturer.

Ensure that there is no build up of soot or other deposit on any burner holes before each use.

Inspect the SmartExtinguisher™ before each use. If there are any signs of damage or rust on the cylinder body, do not use the SmartExtinguisher™ and contact BullEx for further support. Occasionally some rust might build on the threads of the cylinder. The user must wipe down/scrub the threads with a rust removing agent and/or a mild abrasive pad.

DO NOT USE LUBRICANTS ON ANY PARTS OF THE SYSTEM.

Remove any debris and combustible materials from the "burn box". I.T.S. must be kept clear and free from combustible materials, gasoline and other flammable vapors and liquids.

The supply hose assembly should be visually inspected prior to each use of the appliance. If it is evident there is excessive abrasion or wear or the hose is cut, it must be replaced prior to putting the appliance into operation. The replacement hose assembly shall be specified by the manufacturer. See parts list.

It is recommended that the SmartExtinguishers™ be dried inside and out after completing a training session.

The siphon tube on the SmartExtinguisher™ gradually forms a coating on its surface due to hard water deposits. The siphon tube should be wiped down and cleaned after use. Cleaning can be done with a mild abrasive pad or just a general household cleaning agent and a cloth.

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Periodic Maintenance

Periodically check the pilot assembly and pilot flames:

- The housing should not be damaged in any way.
- The pilot should produce two equal size flames.
- The electrode tip should be approximately 1/8”-1/4” from the pilot housing.

If the pilot changes size or shape or does not light consistently contact BullEx for further support.

Have the SmartExtinguisher(s)™ Hydro-tested by a qualified Fire Equipment Dealer every year.

The I.T.S. should be inspected at least annually by a qualified service agency trained in the function of LP gas controls and equipment.

For further periodic maintenance information, see the maintenance guide included with this manual.

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DIAGNOSTIC TESTS

The Intelligent Training System is equipped with 3 different diagnostic tests that can assist in the troubleshooting/maintenance of the system. There is a tilt sensor test, flame sensor test, and transducer test.

To Enter Diagnostic Mode:
Hold down the Flare Up button while plugging the system into a power source (battery pack/12V car adapter).

Figure 30: Test Mode

Once in diagnostic mode:
Turn the selector switch to choose desired test then press the Flare Up button to select it.

A: Tilt Sensor Test
B: Tilt Sensor Test
C: Transducer Test
Full: Flame Sensor Test

Figure 31: Tilt Test selected

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Tilt Sensor Test

The Intelligent Training System has a tilt sensor that it uses to determine if the system is level. ITS should always be set up on a level surface or ITS' adjustable feet should be used to level the system. If that is not possible, training should not be conducted. If the water cut-outs do not provide enough information when leveling, the tilt sensor test can be used to determine if the system is level.

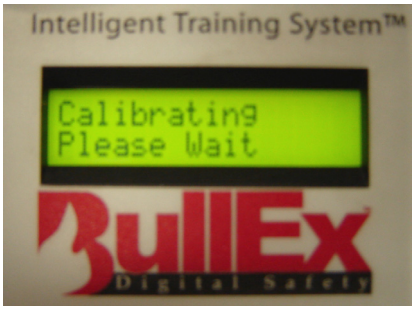

Figure 32

Figure 33

1. Press the "FLARE UP" button on the hand held controller when "Tilt Test" is selected. *See Figure 32.*
2. Release the "FLARE UP" button and the screen will display "Calibrating Please Wait." *See Figure 33.*
3. After a few seconds the screen will display the "FB Tilt" and "LR Tilt." These values are a leveling assistance. 3000 is perfectly level, however anywhere between 2900 and 3100 is acceptable.

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Transducer Test

The transducers are an important yet delicate part of I.T.S. With proper care they will last a long time. However, scratches and dents will damage them and require replacement. In order to tell if they need to be replaced a transducer diagnostic test can be performed.

Figure 34

Figure 35

Figure 36

Figure 37

Figure 38

Steps:

1. Ensure that a SmartExtinguisher™ is filled with air and water.
2. Press the "FLARE UP" button on the hand held controller when "Sensor Test" is selected (In Choose Mode, s*ee Figure 31.*)
3. The controller will ask you to "Stand 6 feet back, Aim left sensors".
4. After a few moments the screen will read "Press to begin, Aim at Sensors." To begin the diagnostics press the "FLARE UP" button. *See Figure 34.*
5. The screen will read "Discharge Ext at the Left Sensors". One will have approximately 5 seconds to discharge the SmartExtinguisher™ at both ultrasonic transducers on the left side of the unit. The user should discharge the extinguisher from 6 or 8 ft. away as if operating a normal training evolution. *See Figure 35.*
6. Next, the screen will read "OK Recharge with WATER and AIR." Make sure the extinguisher has enough water to discharge a second time and boost the extinguisher back to 100 PSI. *See Figure 36.* Press the "FLARE UP" button to continue
7. The System will then read "Press to begin Aim at Sensors" where the user will press the "START/STOP" button when ready to begin. *See Figure 34 again.*
8. From there the user will have 5 seconds to aim at the right two ultrasonic transducers and discharge the extinguisher.
9. Afterwards, the screen will read "OK: Values less than 120 replace" and after a few seconds will go to the value read-out screen. *See Figure 37.*
10. The value read-out screen displays the receiving strength of each transducer. In our example above, all are reading zero meaning they are all broken. However, any value below 120 is unacceptable and must be replaced. To replace transducers please contact BullEx for a replacement kit and instructions. *See Figure 38.*

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Flame Sensor and System Voltage Test

The Intelligent Training System has a flame sensor that it uses to determine if the pilot is lit. If you believe the flame sensor is not responding or that the voltage to the system is low, this test can be

Figure 39

Figure 40

1. Press the "FLARE UP" button on the hand held controller when "Flame Sensor" is selected. *See Figure 31.*
2. Release the "FLARE UP" button and the screen will display "Hold: Hold to Run Button." *See Figure 39.* Make sure the line has been purged of air and the pilot will light. If necessary cycle the power, enter the sequence, and press and hold ignition until the line is purged.
3. If you are sure the line is purged, press and hold the "IGNITION" button. After a few seconds of the testing the screen will look as seen in *Figure 40.* A flame sensor value and voltage reading will be displayed. The flame sensor value in *Figure 40* is a good 469. Any value above 100 is good. Values between 50 and 100 will work but may cause the system to light slower than normal. Attempt to clean the bulb with a household cleaner. Replace the bulb if the value is below 50 even after cleaning.
4. The voltage displayed in *Figure 40* is also good. Recharge the battery pack if the voltage is below 11 Volts. Attempting to run the system when the battery pack is low can damage the battery pack. If a car is being used, do not use that vehicle if the voltage is below 11 volts.

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TROUBLESHOOTING

Handheld Controller displays ““Intelligent Training System v2”

If you plug in the Handheld Controller after powering-up the system the display will read, “Intelligent Training System v2.” After a short time the screen will display, “Unplug yellow cable and plug back in.” Reset the system by unplugging the yellow power cable and plugging it back in.

The Handheld controller displays “Read manual before use.”

The entry sequence has been entered incorrectly. Cycle the power by unplugging the yellow power cable from the battery pack and plugging it back in. Then see page 21 for assistance entering the sequence. For further problems call BullEx for assistance.

Tilt Alarm

If the unit is not leveled properly the tilt alarm will activate

The Handheld Controller will read “Error 211 Tilt!”

To reset this alarm:

Release the IGNITION switch
Disconnect all cables and hoses from I.T.S.
Level I.T.S. correctly
Reconnect all cables and hoses as directed in the “Preparation Instructions”
Attempt to re-ignite the pilot per the “Igniting the Pilot” section

If the unit is knocked or bumped into, the tilt alarm will activate

The Handheld Controller will read “Error 211 Tilt!”

To reset this alarm:

Release the IGNITION switch
Ensure that the person or object that struck I.T.S. is safe.
Inspect I.T.S. for any damage that may have been caused by the collision
If damage is found, do not use I.T.S.
Contact BullEx for further support
If no damage is found, ensure the system is set-up correctly for continued use and attempt to re-ignite the pilot per the “Igniting the Pilot” section.

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Low Voltage Alarm

The low voltage alarm is triggered when the power source used is not or no longer capable of supplying the necessary current to run the Intelligent Training System. When using a battery pack and this alarm occurs DO NOT continue to use the battery pack. Doing so can cause permanent damage to the battery.

The pilot is not lighting

- Make sure the propane tank is turned on
- Make sure the propane hose is firmly connected
- Check that the pilot is sparking – if not contact BullEx.

The pilot is lit but not recognizing

- Perform a flame sensor test as described on page 32
- If the sensor reads correctly, try to light the system again. If it does not work contact BullEx.
- If the value is between 50 and 100, try to clean the bulb with a household cleaner, and then attempt to use the system again. If that does not work, contact BullEx.

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WARRANTY INFORMATION

All parts such as stainless steel sheet metal components, gas valves, controls, and hoses are covered and BullEx will provide replacement parts free of charge during the warranty period. The warranty period shall begin on the ship date and continue for one full year. Labor related to warranty repair is covered free of charge during the warranty period. Repair work, however, requires the prior approval of an authorized company official. Labor costs to the account of BullEx are based on a predetermined rate schedule and any repair work must be done through an authorized BullEx dealer. This warranty covers labor and parts related defects. This warranty does not cover neglect, accidents, mis-use, or negligence on the operator's part.

CONDITIONS AND LIMITATIONS

BullEx, INC. warrants its products against manufacturing defects to the original purchaser only – i.e. the individual or legal entity (registered customer) whose name appears on invoice for the I.T.S. system, provided that the purchase was made through BullEx or an authorized BullEx dealer and is subject to the following conditions and limitations:

This factory warranty is nontransferable and may not be extended whatsoever by any of our representatives. Assembly and use must be done in accordance with the instructions included with the product and all local and national fire codes.

This Limited Warranty does not cover any damage caused by misuse, lack of maintenance, hostile environments, accident, alterations, abuse or neglect, and parts installed by other manufacturers will nullify the warranty.

This Limited Warranty does not cover and scratches, dents, corrosion, or discoloring by heat (all stainless steel will discolor), abrasive and chemical cleaners will also damage the appliance. In the first year only, this warranty extends to the repair or replacement of warranted parts which are defective in material or workmanship provided that the product has been operated in accordance with the operation instructions and under normal conditions.

After the first year, BullEx, INC. will not be responsible for replacement part expense, installation, labor or any other costs or expenses related to the reinstallation of a replacement part, and such expenses are not covered by this warranty.

Notwithstanding any provisions contained in this Limited Warranty, BullEx, INC.'S responsibility under this warranty is defined as above and it shall not in any event extend to any incidental, consequential or indirect damages.

This warranty defines the obligations and liability of BullEx, INC. with respect to the BullEx, INC. gas appliance and any other warranties expressed or implied with respect to this product.

This limited warranty does not cover damages resulting from the use of components not supplied with the appliance, or the use of fuel other than that specified.

Any damages to appliance due to weather, long periods of dampness, condensation, damaging chemicals or cleaners will not be the responsibility of BullEx.

The bill of sales or copy will be required together with a serial number and a model number when making any warranty claims from BullEx or authorized dealer.

BullEx, INC. reserves the right to have its representative inspect any product or part thereof prior to honoring any warranty claim.

BullEx, INC. or its representatives shall not be liable for ANY transportation charges, labor charges or duties.

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